

that the application of the Baranetzky auxanometer to a study of their growth is either unknown or rarely practiced. No record of such use can be found. The writer therefore ventures to note a method of setting up the apparatus, for this purpose, which is now being employed with good results in the botanical laboratories of the University of Minnesota.

Potatoes are selected that make the tubers habitually some distance from the base of the aerial stem. The soil is removed through a separable side of the culture-box and a tuber is exposed. This is blocked up rigidly from below, in such a manner that no downward movement of the tuber can take place. A jacket made of two small square pieces of cigar-box wood is now fitted on the upper and under sides of the tuber, the lower piece resting on the block below. The pieces are held around the tuber by means of very slender rubber-bands and by small cleats on their faces which grip the tuber gently. The upper of these squares of wood is furnished with a central screw to which the thread of the tracing wheel is attached. The whole is then covered with soil and the side of the box replaced. The smoked cylinder is now brought into position, the battery and clock connected and the tracing-needle adjusted. The clock should be set to release the armature every three hours. Now, when growth takes place in the tuber, since no movement downward can ensue, the thread is released and the tracing-needle makes a vertical stroke, indicating the growth. (See Vines : Physiology p. 399; Sachs : Physiol. Eng. trans. p. 557; Pfeffer : Pflanzenphysiologie II, p. 86; Detmer : Handbuch Pflanzenphys. p. 257; Goodale : Physiol. Bot. p. 383.)

Experiments made up to date indicate but do not demonstrate a daily periodicity in the growth of the potato tuber. If such is the case two explanations would at once suggest themselves. Since the apparent maximum of growth in this organ lies between 10 P. M. and 8 A. M. it might be compared with aerial shoots and the rhythm be considered a hereditary trait, as the embryonic positive-heliotropic curvature of ivy shoots. More reasonable, however, would be the other explanation, co-ordinating the daily rhythm of the tuber with the rhythmic production of starch in the assimilating surfaces.

A more extended series of experiments along this line is being conducted by Mr. C. P. Lommen and he will doubtless be able to speak more fully upon the matter later on. This note merely calls attention to the method of study.—CONWAY MACMILLAN, *University of Minnesota*.

A monstrous form of a common field daisy.—The plant which I am about to describe was received from Virginia where it was found



blooming in a fence corner in December last during a period of warm sunny days and occasional sharp, frosty nights.

The head is normal as to the involucre, the white rays and a zone of a certain width of disk flowers. Then however comes a zone of ray flowers again, standing more or less upright and looking outwards; and surmounting the rounded summit of the receptacle is a tuft of the brown bordered scales quite similar except as to size to those of the involucre. There is no extension of the normal axis and no tendency to a repetition of the flowering or vegetating shoot; hence it is not an example of the not uncommon *proliferation* unless we should call it a case of inverted proliferation which would not be accounting for its existence.

The explanation which I would offer is based upon a hint obtained from Sachs's Plant Physiology where he describes an abnormal sun-flower in illustrating the principles of acropetal succession in growth. I should say that an injury, possibly cold, arrested growth at the developing apex of the receptacle when this latter was still quite young so that it ceased to be the growing point. Just below and round about this region renewed proliferation of embryonic tissue began and proceeded backwards towards the older parts, forming a new growing zone to which the arrested original growing point now stood in the same relation as the older parts in the ordinary receptacle stand to the normal growing apex or centrum. In further development the disposition of the members of the inflorescence would now be in the true but inverted progressive sequence from the older to the newer parts of the axis; that is, the abnormally placed involucreal scales about the center, followed by the ring of ray flowers and these succeeded by the disk flowers which merge into those of the unaltered parts of the receptacle.—B. W. BARTON, *Baltimore, Md.*

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## EDITORIAL.

IT REALLY SEEMS that the flood gates have been opened in the matter of priority in nomenclature and that we are to be deluged with ancient names for well-known plants. That too great conservatism may have withheld the authors of our floras from making needful changes may be conceded to those who are radical reformers, since it is of no importance for our present purpose. But the search after new-old names is leading those who are making changes into some ludicrous and even ridiculous blunders. It is not our intention to